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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/111,978 07/08/98 BIEMAN

L 139.032USR

EXAMINER

MM91/0622

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ART UNIT

PAPER NUMBER

2877

DATE MAILED:

06/22/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/111,978

Applicant(s)

BIEMAN, LEONARD H.

Examiner

Hoa Q. Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/6/00, 1/2/01, 3/6/01.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-85 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30-85 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7, 17.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____.

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DETAILED ACTION

Reissue Applications

1. Claims 30, 42, 56, 60, and 72 are rejected under 35 U.S.C. 251 as being an improper recapture of broadened claimed subject matter surrendered in the application for the patent upon which the present reissue is based. See *Hester Industries, Inc. v. Stein, Inc.*, 142 F.3d 1472, 46 USPQ2d 1641 (Fed. Cir. 1998); *In re Clement*, 131 F.3d 1464, 45 USPQ2d 1161 (Fed. Cir. 1997); *Ball Corp. v. United States*, 729 F.2d 1429, 1436, 221 USPQ 289, 295 (Fed. Cir. 1984). A broadening aspect is present in the reissue which was not present in the application for patent. The record of the application for the patent shows that the broadening aspect (in the reissue) relates to subject matter that applicant previously surrendered during the prosecution of the application. Accordingly, the narrow scope of the claims in the patent was not an error within the meaning of 35 U.S.C. 251, and the broader scope surrendered in the application for the patent cannot be recaptured by the filing of the present reissue application.

In the original application (08/593,095), applicants' amendment filed on 11/18/96 in which the limitations "**at a substantially constant velocity**", "**which are substantially uniformly spaced**", and "maintaining the at least one projector and the detector in a **substantially fixed** relation to each other " are inserted into claims 1 and 14 to overcome the rejection. In the remarks, applicant stated that these limitations are

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distinct from the prior art. However, in the present reissue application, these limitations are omitted in the new independent claims 30, 42, 56, 60, and 72. Thus, they are improper recapture of broadened claimed subject matter surrendered in the application for the patent upon which the present reissue is based. In other words, recaptured based on claim limitations added in original application to overcome prior art.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 30, 32-33, 35, 36, 38-42, 44-46, 48, 52-58, 60, 62-63, 65-66, 69-72, 74-76, 78, and 82-85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeyama et al (5,450,204) in view of Halioua et al (4,641,972) .

Shigeyama et al (of record) discloses an inspection device for inspecting printed state of cream solder comprising steps of: projecting a pattern of light (column 3 lines 35-36); maintaining the projected pattern of light and the detector in a substantially fixed relation to each other (see figure 1, only the circuit board (10) is moved); moving the

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object (10) relative to the pattern light so as to scan the projected pattern of light across a surface of the object; imaging the imagable light signal onto the detector (3); measuring with the detector an amount of light from the surface of the object; and computing dimensional information based on the measured step (figures 1 and 6). Shigeyama et al does not explicitly teach that the detector having a first and second and third detector element, wherein the surface of the object is imaged onto the first detector element at a first phase of the projected pattern of light, onto the second detector element at a second phase and onto the third detector element at a third phase; however, such a feature is known in the art, for example as taught by Halioua et al. Halioua et al (of record), form the same field of endeavor, discloses a method and apparatus for surface profilometry in which each phase of the projected pattern of light is detected by each detector in the detector array (120) (see column 4 lines 10-12, and line 62 through column 5 line 4). Those of ordinary skill in the art at the time the invention was made to replace the detector of Shigeyama et al by a detector array as taught by Halioua et al because they would function in the same manner. A substitution for each other is generally recognized as being within the level of ordinary skill in the art.

Regarding claims 32, 36, 38, 44, 62, 66, 74, and 79; Shigeyama et al teaches that the optical axis of the detector (3) is perpendicularly to the surface of the object (10) (figure 1).

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Regarding claims 39-41, 52-54, 69-71, and 82-84; Shigeyama et al does not explicitly teach that two projected patterns of light are used; however, it would have been obvious to one having ordinary skill in the art to add another projected pattern light into the invention of Shigeyama et al so that the two projected patterns of light are alternately projected. The rationale for this modification would have arisen from the fact that using an extra projected light would provide a better performance of the light projection system.

4. Claims 31, 34, 37, 43, 47, 49-51, 59, 61, 64, 67-68, 73, 77, 79-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeyama et al and Halioua et al as applied to claims 30, 32-33, 35, 36, 38-42, 44-46, 48, 52-58, 60, 62-63, 65-66, 69-72, 74-76, 78, and 82-85 above, and further in view of PRIOR ART.

Both Shigeyama and Halioua et al fail to teach or suggest that the detector is a tri-linear array camera or a CCD camera in which each detector element includes a plurality of detector pixels elements or a row of CCD sensing elements; however, such a feature is known in the art as stated in column 3 lines 50-56, **"a camera of the optical head 12 preferably includes a solid state image sensor such as a tri-linear array camera 24. For example, the camera 24 may be the Kodak CCD chip model KLI-2103 which has 3 rows of detector of sensing elements 25"**. Thus, it would have been obvious to one having ordinary skill in the art to replace the detector of Shigeyama

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or Halioua et al by a tri-linear array camera which is known in the art. The rationale for this modification would have arisen from the fact using such tri-linear camera would detect first, second, and third phase of the projected pattern of light simultaneously, therefore the speed of measurement is improved.

Response to Arguments

5. Applicant's arguments filed 11/6/00 and 3/6/01 have been fully considered but they are not persuasive.

a. Applicant's remarks, pages 17-18 of the amendment filed on 11/6/00, argues that the reissue claims clearly are not materially similar to the claims originally surrendered, even though they omit limitations added to obtain issuance of the patent. The argument is not deemed to be persuasive because the limitations omitted in the reissue is "**at a substantially constant velocity**", "**which are substantially uniformly spaced**", and "maintaining the at least one projector and the detector in a **substantially fixed** relation to each other". This provides a broadening aspect to the reissue claim that was clearly argued in the original application (08/593,095) to overcome the rejection based on references of Kuchel (5,135,308) and Bullock et al (5,488,478). Thus, omission of "**at a substantially constant velocity**", "**which are substantially uniformly spaced**", and "maintaining the at least one projector and the detector in a **substantially fixed** relation to each other" is related to subject matter surrendered in

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the original application. A narrowing limitation was also provided in reissue claims 30, 42, 56, 60, and 72; i.e., **"imaging the imagable light signal onto the detector, the detector having a first, second, and a third detector element ... at a third phase of the projected pattern of light"**, etc... This narrowing limitation, however, is not at all related to the prior art rejection and not related to the subject matter surrendered in the original application. Thus, the rejection of the claims under 35 U.S. C. 251 is proper.

b. Applicant's remarks, pages 22-24, argues that Shigeyama et al does not teach the step of "maintaining the projected pattern of light and the detector in a substantially fixed related to each other". The examiner disagrees because such a feature is taught by Shigeyama et al in column 4 lines 18-31, the light source and detector are fixed relative to each other. In addition, the object (10a) is moved by X-Y controllers (4).

c. Halioua et al teaches that each phase of the projected pattern of light is detected by each detector in the detector array (120) (column 4 lines 10-12 and 62-65). Thus, the first, second, and third detector elements are disclosed in Halioua et al.

d. With respect to the **"Request under MPEP 2144.03"**. Applicant is referred to the reference of Kuchel (of record) who teaches that the use of two projection lights are known in the art (see figure 1 or column 12 lines 20-25 of Kuchel). Thus, this reference is cited to support for examiner's position.

In view of the foregoing, it is believed that all the rejections above are proper.

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Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

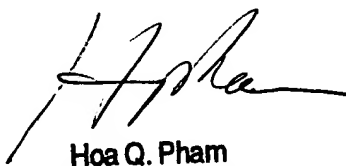
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Hoa Pham whose telephone number is (703) 308-4808. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722 or 7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Pham/hp

June 04, 2001


Hoa Q. Pham
Primary Examiner